

## Claims

1. An information transmission system having
  - a transmitter (1) comprising at least one coupling element (2) via which substantially an electric near field is emitted.
  - an existing infrastructure body (3) comprising an electrically conducting conductor element (6) that is electrically insulated from ground, into which conductor element the electric field is coupled, and
  - a receiver (4) comprising a coupling element (5) by means of which the field transmitted in the conductor element (6) is coupled out.
- 15 2. The information transmission system as claimed in claim 1, wherein the electric field is coupled into the conductor element (6) directly or capacitively.
- 20 3. The information transmission system as claimed in one of the preceding claims, wherein the conductor element (6) is made of a substantially homogeneous material and is electrically conductive, said conductance being time-invariant.
- 25 4. The information transmission system as claimed in one of the preceding claims, wherein the conductor element (6) has an electrical impedance ( $C_{Bi}$ ) with respect to ground potential.
- 30 5. The information transmission system as claimed in one of the preceding claims, wherein the conductor element (6) is an unbalanced conductor element which uses the

ground potential as the return line for the information transmission.

6. The information transmission system as claimed in  
5 one of the preceding claims, wherein the electric field  
is modulated with information to be transmitted.

7. The information transmission system as claimed in  
claim 6, wherein the carrier frequency lies approximately  
10 between 5 MHz and 50 MHz.

8. A transmitter for transmitting information  
comprising at least a power supply (8), a modulator (10)  
and a coupling element (2), by means of which the  
15 information to be transmitted is coupled into an  
electrical conductor element (6) by a substantially  
electric near field.

9. A receiver for receiving information comprising a  
20 power supply (8), a demodulator (10) and at least one  
coupling element (5), by means of which the information  
transmitted via an electrical conductor element (6) is  
coupled out of the conductor element (6) by a  
substantially electric near field.

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10. An application of the information transmission  
system as claimed in claim 1 in a tire pressure measuring  
system of a motor vehicle, wherein the conductor element  
is part of the bodywork (15) of the motor vehicle and a  
30 transmitter ( $Tx_i$ ) is disposed in each tire (12) and the  
associated receiver ( $Rx_i$ ) is disposed on the vehicle in  
the vicinity of the bodywork (15).

**Abstract**

Disclosed is an information transmission system comprising a transmitter (1) which capacitively and 5 asymmetrically couples an electric near field into an electrical conductor element (6). Said conductor element (6) is made of an essentially homogeneous medium and is provided with an impedance (CB) to the ground, which is used as a return conductor during the transmission of 10 information. A receiver (4) capacitively decouples the electric field and demodulates the transmitted information. The inventive information transmission system can be used in a tire pressure measuring system of a motor vehicle, for example, the conductor element being 15 part of the body of the motor vehicle.

(Fig. 1)

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